UNITED
NATIONS

E

Economic and Social Council

Distr.
LIMITED

E/CONF.85/L.48
17 July 1992

ENGLISH ONLY

SIXTH UNITED NATIONS CONFERENCE
ON THE STANDARDIZATION OF
GEOGRAPHICAL NAMES
New York, 25 August-3 September 1992
Item 6 (b) of the provisional agenda*

TOPONYMIC DATA FILES: DATA ELEMENTS REQUIRED

Core data fields for the records of approved Canadian geographical names

Paper submitted by Canada**

* E/CONF.85/1/Rev.1.

** Prepared by Helen Kerfoot, Executive Secretary, Canadian Permanent Committee on Geographical Names.

92-32363 3461d (E) 240792 *310792*

/...

Since 1897, Canada's national names authority has been maintaining records of official geographical names for places and features within the country. Initially names records were kept on filing cards, stored alphabetically by province or territory.

Over many decades these records were added to, or corrected, by hand, and the type of information and how it was recorded varied, sometimes depending upon the interests or available time of individual employees. By the 1960s many provinces and territories had their own card systems, in addition to the drawers of names records maintained by the Secretariat of the Canadian Permanent Committee on Geographical Names. In the late 1970s automation of names records began, and a more consistent approach was needed for fields (or elements) of data to be associated with each name to be entered into digital toponymic data bases.

Provision of various fields of information for the national records has until quite recently been very informal. However, with the sometimes diverging needs of provincial/territorial and federal authorities, the CPCGN recently decided to document "core" fields of data for geographical names records. These are required fields for all official names, which are supplied by members of the CPCGN for storage on the Canadian Geographical Names Data Base (CGNDB), maintained by the federal department of Energy, Mines and Resources (EMR). Each decision-making authority on the CPCGN may, of course, store additional fields of data to suit their own requirements (e.g. larger scale map sheet numbers, documentation on people interviewed during field collection of names, etc.). At the same time, EMR may add other fields of information to the core fields received for the official names being entered into the CGNDB (e.g. identification of a feature within a national park, or which crosses a provincial or international boundary).

The following core data fields for official name records being provided for entry into the CGNDB were approved by the CPCGN in October 1990.

1. **Geographical name** (of a feature, place, etc.).

   Approved names should be in the authorized form, including the appropriate capitalization, diacritics, hyphens, included abbreviations (e.g. St.) etc.

2. **Province(s) and/or territory(ies)** in which the feature/place is located.

3. **Status** which indicates, at least, a differentiation between

   a) currently approved/official, and
   b) **not** currently approved/official.

4. **Cross-reference** to formerly approved name, if a name change is being made.

5. **Date** on which a name was approved, or, where applicable, ceased to be approved for current use.

6. Indication of **type of feature/place** designated (e.g. river, town, provincial historic site, etc.).

7. **Latitude and longitude**

   - at mouth of flowing water features
   - at centre of other physical features

- where appropriate and necessary for meaningful identification, coordinates should include seconds, referenced to an identified datum; coordinates for **place** names should, wherever possible, be identified with seconds
- for flowing water features, coordinates should also be provided for the "head" of the named feature.

8. **NTS map reference** - All 1:50 000 National Topographic System (NTS) map sheets which include the named entity should be indicated; the first one listed should match the designated coordinates. (Canadian Hydrographic Service charts should be used if the feature falls outside the NTS framework.)

9. At least one element of **locational data** (e.g. first level administrative or geographical division) within a province or territory, if such a division exists; or section, township and range, if applicable.

   (n.b. In the past, no divisions have consistently been recorded for Yukon and Newfoundland.).

10. Brief **narrative of location**.

11. **Graphic representation** to show limits of name application - to be usable at 1:50 000.

It should be noted that very often more information than the minimum core fields may be supplied. For example, more details of status may be provided (such as, "name change", "altered application", etc.) for a currently approved name. It must also be realized that only recently have there been requirements for coordinates to be read to the accuracy of seconds (rather than just degrees and minutes); or for headwater coordinates to be supplied for flowing water features; or for all NTS map sheets to be provided for sizeable features. Consequently, although this information is now being supplied for records being added to, or changed, on the CGNDB, it is not yet available for most records previously entered in the digital data base.

In addition to the core fields, other information is considered "highly desirable":

1. **Second level of administrative unit** (where applicable), within a province or territory (e.g. township in Ontario, parish in New Brunswick).

2. **Unofficial variant names** to an approved name.

3. Summary of **origin or historical data**.

* * * *

The "core" fields of data are now also becoming very important in relation to wide distribution of digital data. Although some jurisdictions may for particular reasons (e.g. copyright, privacy, etc.) wish to restrict access to certain elements of information contained in a names record, it is agreed by CPCGN members that all "core" data fields should be available for dissemination, as widely as possible.

UNITED
NATIONS

E

Economic and Social Council

Distr.
LIMITED

E/CONF.85/L.49
17 July 1992

ENGLISH ONLY

SIXTH UNITED NATIONS CONFERENCE
ON THE STANDARDIZATION OF
GEOGRAPHICAL NAMES
New York, 25 August-3 September 1992
Item 5 (b) and (c) of the
provisional agenda*

NATIONAL STANDARDIZATION: OFFICE TREATMENT OF NAMES;
TREATMENT OF NAMES IN MULTILINGUAL AREAS

The Canadian geographical names database: An overview

Paper submitted by Canada**

* E/CONF.85/1/Rev.1.

** Prepared by Barbara Bowler, Chief, Toponymy Section, National Atlas Information Service, Energy, Mines and Resources, Canada.

92-32366 3324g (E) 290792 310792

/...

The Canadian Geographical Names Data Base (CGNDB), formerly known as the National Toponymic Data Base (NTDB), is a national depository of Canada's geographical names. Because of the confusion created by a similar data base name and acronym used by Energy, Mines and Resources, in September 1990 we decided to change the name of our geographical names data base. This digital data base is composed mainly of names recorded by the Canadian Permanent Committee on Geographical Names as well as name entries from our Special Records files. Ongoing maintenance and integrity of the data base is the responsibility of the Toponymy Section of the National Atlas Information Service (NAIS).

The CGNDB now resides on a SUN-4 computer and is managed with version 6.0 of the ORACLE Relational Database Management System. Access to the information is possible using the SQL language, a standard language for relational data bases, or a full screen forms interface. ORACLE can take input from any standard ASCII file. With our available hardware, it is possible to output information on several types of media, including: 3 1/2" diskette, 5 1/4" diskette, 1/2" data cartridge tape, and 8mm cassette tape. ASCII substitutions for specific accented letters have been replaced with 8-bit characters conforming to the ISO 8859 standard and the forms interface has been modified for easier access to information. Data can be made available in ASCII or EBCDIC code, an ORACLE - Export format, or a DOS text file.

The CGNDB presently contains approximately 470 000 geographic names records. Populated place names presently constitute 14% of the name records and physical features, e.g., lakes, rivers, and mountains, make up the remaining 86%. An associated cadastral reference is usually recorded for each name, for example, a county in Prince Edward Island or a section, township, and range in the Prairie Provinces. Also a location narrative is usually recorded to relate the name to its surrounding area. An origin narrative is stored for approximately 25% of the names records; cross-references are included in many geographical names records.

Cooperative ventures with other government departments and agencies, both federal and provincial have started or been completed. For example, municipal names from the files of Statistics Canada are being matched with approved CPCGN geographical place names in the CGNDB. The purpose of this project is to correct those municipal names collected from a variety of sources and stored at Statistics Canada for the next Census. In turn, EMR will be allowed access to population data necessary for compilation of several NAIS products. We have also recently joined the Department of National Defence (DND) and the GIS Division of EMR in the effort to update the nomenclature for the Digital Chart of the World project now available on CD-ROM. The names files produced for the DCW project will also be used for future updates of the World Aeronautical Chart series produced by Aeronautical Charts; both map products are at the 1:1M scale. The CGNDB has also recently been used to compile a comprehensive populated place names list to update the gazetteer of populated place names used by the Chief Electoral Officer. During the last few years, the names offices for Saskatchewan and British Columbia have provided contract personnel to match World War Two casualty names with the associated provincial geographical names records. Canadian Parks Service contract staff and Secretariat staff have begun to assign National Park codes to features located within Canada's many national parks.

Our data base is only textual in nature and does not allow us to compile the names manuscripts digitally. These names manuscripts are still compiled manually for each map in the National Topographic System (NTS) Mapping Programme. It is hoped that in the very near future, a cooperative venture with Topographical Mapping will address the need for digital names files to accompany the digital cartographic files now sold by Topographical Mapping.

Extensive editing has to be done for each names list prepared for any NTS map sheet. An initial dump from the CGNDB will supply a categorized list, noting any approved names which fall within a particular polygon or within the boundaries of a requested NTS map sheet, e.g., 31 G/5 Ottawa. Nomenclature staff must then refer to paper map files and special records files to bring the names list up-to-date to ensure that all approved names, labels, and the sheet title are correct for the production of the next edition of this map sheet. Once completed, the names list is stored. It will be called up again for the next update to that particular map sheet or will be made available to a client wishing a digital names list to accompany a digital cartographic file.

CANADIAN GEOGRAPHICAL NAMES DATA BASE (CGNDB) NAME RECORD

Feature Name
Arviat
Name Key
ARVIAT

Unique Key	**Latitude**	**Longitude**	**Region**	61	Northwest Territories
LBCFY	610630	940330	**Status**	A8	Name Change
	Gazetteer Map		**Generic**	11	Hamlet(1)
	055E01		**Obscure**	Y	
			Border Flag		

DATES	**DD/MM/YY**	**CC**
Decision	: 01/06/89	19
Meeting	:	
CGNDB Update	: 31/05/89	

Cross-reference
Eskimo Point

Location 1 : Keewatin
Location 2 :
Loc-Narr : West shore of Hudson Bay

Origin Narr:

Eskimo Point was adopted 20 April 1946 on 55 SW as a Settlement. The post office was established 10 August 1962. Eskimo Point (Hamlet) was confirmed 31 March 1980 on 55 E at 61 06 40 - 94 03 30. Name changed to Arviat 1 June 1989 on 55 E at 61 06 30 - 94 03 30. Arviat means 'place of the bowhead whale'.

Sample output record from the CGNDB

Several of the provinces, such as Quebec, Alberta, and Manitoba, are very active in the development of their own digital geographical names data bases. Other provinces which might not have the necessary resources to develop or keep a digital names data base, can very easily tap into the CGNDB for reference, with the proper instructions. The Northwest Territories and British Columbia members of the CPCGN have recently acquired software and pertinent data from the Toponymy Section to set up territorial and provincial data bases, which will reside in PC environments. Data will be exchanged freely between our respective data bases, and specifications and procedures are now being developed. We hope that other CPCGN members will gradually be able to access information on-line and to transmit their name decisions directly to the CGNDB to avoid duplication of effort.

The time has come to move towards standard outputs and away from customized outputs derived from the CGNDB. Upon review of the requests filled over the last few years, we noted that certain products were commonly requested. This examination formed the basis for the decision on what our standard product line is. Predetermined file structures will be made available in one of several formats. Rather than having individual regional files, a choice between files of comparable size or a complete national file will be made available. For example, a file could contain preselected names information for the Atlantic Provinces, Quebec and Ontario, the Prairie Provinces, or British Columbia together with the Yukon Territory and the Northwest Territories. A further option would be a choice between a populated place names file or the same file combined

with physical feature names. Another choice would be to acquire names (and associated data) which are new or have changed since the publication of the latest edition of a particular gazetteer volume. These examples plus the various map products, i.e., NTS 1:50 000, 1:250 000, 1:1M, 1:2M, and 1:7.5M scales, will make up our repertoire of standard digital products.

Before ordering digital names files, the client should examine the sample record to see the type of information stored for each name entry. By contacting the Toponymy Section, one can receive further explanation of our standard products and learn the cost to purchase data from the Canadian Geographical Names Data Base (CGNDB).

It is understood that the information acquired from the CGNDB is for the sole use of the purchasing agency and is not to be sold without the prior approval of NAIS, Energy, Mines and Resources Canada. Should the purchasing agency wish to sell any CGNDB data, we would be pleased to discuss a licensing agreement.

If further information is required regarding the CGNDB or the acquisition of digital names information, please contact:

Toponymy Section
National Atlas Information Service
Geographical Services Division
Energy, Mines and Resources Canada
Room 650, 615 Booth St.
Ottawa, Ontario K1A 0E9
Telephone: (613) 992-3647
Fax: (613) 943-8282

UNITED
NATIONS

E

Economic and Social Council

Distr.
LIMITED

E/CONF.85/L.50
17 July 1992

ENGLISH ONLY

SIXTH UNITED NATIONS CONFERENCE
ON THE STANDARDIZATION OF
GEOGRAPHICAL NAMES
New York, 25 August-3 September 1992
Item 6 (c) and (d) of the
provisional agenda*

TOPONYMIC DATA FILES: AUTOMATIC DATA PROCESSING (ADP) SYSTEMS; COMPATIBILITY AND STRUCTURE OF SYSTEMS

A long-term vision and development plan for a Canadian digital toponymic service

Paper submitted by Canada**

---

* E/CONF.85/1/Rev.1.

** Prepared by Helen Kerfoot, Executive Secretary, Canadian Permanent Committee on Geographical Names.

92-32369 3384j (E) 300792

/...

In October 1990, the Working Group on Automated Geographical Names Records established by the Canadian Permanent Committee on Geographical Names (CPCGN) recommended that a long-term vision and development plan be formulated for an appropriate Canadian digital toponymic service.

Later that year a contract for such a vision and plan was awarded to Idon Corporation of Ottawa. Their proposals had to reflect the mandates of provincial, territorial and federal names authorities represented on the CPCGN and permit the broadest possible dissemination and use of geographical names information.

The task was not an easy one, as a complex web of conditions was involved. For example, the contractors had to take into account:

- the nature of existing federal, provincial, and territorial analogue and digital toponymic data bases;
- the current and probable future abilities of individual offices of CPCGN members to contribute to a nation-wide system;
- the cultural differences and needs across Canada as they affect toponymic information gathering and data dissemination;
- the different toponymic decision-making processes in place and foreseen in the various provincial, territorial and federal jurisdictions; and
- the trends in information system management and technology development.

Such a toponymic service should put emphasis on accuracy and currency of data, and timeliness of data availability and dissemination. The report, therefore, had to address:

- content, updating, and responsibility for data fields;
- accuracy and/or precision of data required by users;
- modes of disseminating toponymic records;
- access by CPCGN members' offices, various levels of government, academia, and the general public; and
- links to associated non-toponymic data bases (e.g. population, elevations)

Other questions referred to linking existing hardware; possible networking; and maintenance of graphic, or other representations, of toponymic applications on National Topographic Series maps, primarily at a scale of 1:50 000.

Idon established a number of assumptions. Changes have taken place in the decision-making process, so that approving or changing names has devolved from the federal government to provincial and territorial authorities. At the same time paper-based records have and are changing to paper- and/or computer-based records. Idon worked on the premise that CPCGN members would retain the goodwill to work together, and continue to operate with mutual respect and support. The CPCGN has developed a strategic plan and, among its goals, the Committee addresses automated data bases and resulting toponymic products and services.

In preparing their report, Idon Corporation personnel consulted with all CPCGN members; Energy, Mines and Resources staff; a small selection of users with different needs (e.g. mapping agencies, libraries, academic users); and other national names authorities.

Idon completed its final report in March 1991. Various strategic issues were addressed - standards, CD-ROM versus telecom, a planetary data network, raw data versus products, and various administrative mechanisms. Idon also provided information on a number of technical issues, such as options for recording extents of named features, character sets and telecommunication networks. Above all Idon personnel created a vision and made recommendations which could form the foundations of a development plan.

The contractors presented their conclusions to members of the CPCGN Working Group on Automated Geographical Names Records in June 1991. After discussion, participants made appropriate modifications to the recommendations in the report, for presentation to and adoption by the CPCGN.

The Vision and basic aspects of the recommendations, as accepted by the CPCGN at its annual meeting in September 1991, are summarized below.

---

* This text is prepared from the terms of the contract awarded to Idon Corporation, the report filed by the contractor, and minutes of the 1991 meeting of the CPCGN Working Group on Automated Geographical Names Records.

(1) THE VISION

The Vision for a Canadian Digital Toponymic Service is that:

> *Users retrieve toponymic data by highlighting the appropriate menu items on their computer screens. They can save what they want.*
>
> *The software is intuitive, retrieval time is fast, and the system is indifferent to the type of computer being used.*
>
> *Some users access locally-stored data, others access data from more distant sites, most using some kind of transparent network.*
>
> *CPCGN members who need to change items in the data base or add items to the data base use their passwords.*

- This is subject to the political and economic constraints of each jurisdiction represented on the CPCGN.
- Implementation will start by focussing on products of national interest and involve working together, with each contributor having a stake in the results.
- The CPCGN will ensure that inquiries of Canada-wide scope continue to be accommodated.
- In moving ahead, members will respect the policies and priorities, and the political and jurisdictional concerns of other members.

(2) RECOMMENDATIONS ON POLICIES, PRODUCTS, SOFTWARE AND TECHNICAL ISSUES

A) Policies

All are subject to the policies of the various jurisdictions and are aimed at promoting harmonious relations among CPCGN members, while realizing the vision.

1. Policy on toponymic data bases

Develop a policy on toponymic data bases following these guidelines:

a) the unimpeded flow of information, data and products in analogue form, among members and with the Secretariat will continue, supported by a no-charge policy; and

b) the toponymic data base of each government is the master data base for that government; it is unique and is owned, operated, and controlled by that government (except where legislated or negotiated otherwise).

2. Policy on selling products

Develop a policy for charging profit-oriented companies for electronic products from CPCGN members based on the following:

a) that each jurisdiction has the right to sell its products for whatever it decides, with the exception that neither EMR nor the CPCGN Secretariat will sell its products at a price less than the provinces or territories are selling their comparable products; and

b) CPCGN members agree to provide the Secretariat with product and service price lists (and regular updates) which will be distributed to all members.

3. Policy on products for not-for-profit organizations

Develop a policy for the provision of electronic products[1] from CPCGN members to not-for-profit organizations (for instance, to other government departments, crown corporations, universities, and research institutes, etc.) based on the following principles:

a) the not-for-profit agency can use such products in house for its staff (and students);

---

1 Electronic products include the entire data base and parts thereof, plus any service which is telecom-based.

b) the not-for-profit agency which wants to permit "outsiders" access to such products must first reach an agreement on conditions with the CPCGN Secretariat and/or the appropriate CPCGN member(s);

c) the not-for-profit agency and/or its employees which want to sell or lease their products which are based in the main on the products received from the members of CPCGN must first reach an agreement on conditions with the CPCGN Secretariat and/or the appropriate CPCGN member(s).

B) Products

The products mentioned below are a starting point and are aimed at increasing the dissemination of toponymic information to existing and potential users.

4. Publishing twelve print gazetteers

Provincial, territorial, or federal jurisdictions continue producing a print version of a gazetteer of each province and territory to at least minimum standards accepted by the CPCGN.

5. Publishing one print gazetteer

Work should continue on a concise print version of the gazetteer of Canada in one volume, to include verified factual alpha-numeric information for selected names.

6. Electronic products

Investigate the development of various electronic products (taking into account data ownership, copyright, avoidance of duplication, etc.) and including:

a) Twelve magnetic gazetteers

a magnetic version (in appropriate formats, 5.25" disk, 3.5" disk, etc.) of the gazetteer of each province and territory which might include:

1) verified factual alpha-numeric information of appropriate names in that jurisdiction; and

2) user-friendly retrieval software (with a common interface across all products);

b) One CD-ROM "gazetteer plus"

a "gazetteer plus" of Canada on a CD-ROM which might include for example:

1) verified factual alpha-numeric information of appropriate names;

2) user-friendly retrieval software;

3a) where applicable (first choice) a digital version of appropriate maps to handle issues related to the extent of application of named features;

3b) or where applicable (second choice) fields to permit the recording of a variable number of bounding polygon coordinates and virtual segment end points to be used to define the extent of a name in an alpha-numeric format; and

4) where possible, origin information.

C) Software and technical issues

The following recommendations on software and technical issues concern the Canadian Geographical Names Data Base and the data bases of CPCGN members.

Recommendations 7 and 8 aim at promoting improved access and input to the CGNDB and improved data interchange. Recommendation 8 may not be looked at for quite some time, but its use is anticipated. Recommendation 9 suggests several ways in which CPCGN members might improve not only their data, but also their data bases, so that more useful information can be provided to users.

7. Software

EMR will undertake to have ongoing discussions with other authorities to move ahead, as appropriate.

a) Improving existing software

Enhance the existing *Canadian Geographical Names Data Base* so that the inputting of new records, the changing of existing records, and the searching of the data base can be done in a less cumbersome fashion, in both a stand-alone and telecom

mode, and make such software available to all members;

b) Creating new software

Produce and make available to all members new, user-friendly retrieval software which permits stand-alone and telecom access to both the *Canadian Geographical Names Data Base*, and to the provincial and territorial data bases which use this software; and

c) Establishing an interchange format

Select and make available a format which permits, with the highest degree of efficiency, toponymic data:

1) to be exported from the *Canadian Geographical Names Data Base* to other members' data bases;

2) to be exported from the *Canadian Geographical Names Data Base* to non-members; and

3) to be exported from other members' data bases to the *Canadian Geographical Names Data Base*.

8. *Developing telecom access*

Develop an overall approach which facilitates a standardized method of telecom access to members' data bases for members who desire to permit such access.

9. *Technical issues*

The various sections of this recommendation will require further discussion on implementation and on appropriate priorities.

a) Improving precision of location

Develop a cooperative plan to obtain additional "precision of location" information (seconds of arc or better, or whatever is appropriate to the scale of map on which the decision is recorded) for geographical names in and being submitted to each decision-making jurisdiction's data base (paper or electronic) and to the *Canadian Geographical Names Data Base*;

b) Defining "Geographical name"

Define the meaning of the term "geographical name" in the context of names [i.e., named features] to be included in the various data bases, so that all members can agree:

1) on the minimum suite of names [i.e., types of named features] acceptable for inclusion in each data base;

2) on the minimum core fields acceptable;

3) on the additional optional fields [*identified by each jurisdiction*]; and

4) on the acceptable mechanisms to obtain such information when it is needed and not available through a CPCGN member;

c) Adding header fields

Create an overall header for the data base and for any products produced from the data base that provides the appropriate disclaimers, statements about reliability and identified responsibility for the data itself;

d) Adding extent of feature fields

In order to handle extent of feature within an alpha-numeric data base, add to each record, fields to permit the recording of a variable number of bounding polygon coordinates and virtual segment end points to be used to define the extent of a name;

e) Adding NTS sheet number fields

In order to provide more information about features which cross several National Topographic System (NTS) sheets, add to each record, a field which permits the recording of the NTS sheet numbers for features which are on more than one NTS sheet;

f) Adding character type identifier fields

In order to handle multiple languages with different character sets, add to each record, a field called a character type identifier, which permits the recording of an

indication of the character repertoire to be used in the representation of the name in that record; and

g) Adding "age and change" fields

In order to improve the accuracy of some information in some records, add to each record, fields which permit the recording of information about when the data was collected and when it was last updated.

(3) MECHANISM

The Working Group proposed that the CPCGN disband the Working Group on Automated Geographical Name Records and that, to promote continuity, an Advisory Committee be established as follows:

Advisory Committee on Canadian Digital Toponymic Services (ACCDTS)

To advise and to provide leadership in the development, implementation, and monitoring of objectives to assist the CPCGN in realizing the vision for Canadian digital toponymic services.

Based on the Recommendations, the work of the Advisory Committee will include:

- the investigation of concerns of CPCGN members and issues associated with the development of electronic products, and the accessibility, exchange, and sales of toponymic data; and

- the investigation of standards for data storage and exchange appropriate for CPCGN use.

Idon Corporation's report **Toward the Future: a long-term vision and development plan for a Canadian Digital Toponymic Service** contains much valuable material and will constitute a basic and valuable reference tool for ACCDTS use.

* * * * * *

In early 1992 the advisory committee was established and held its initial meeting. One of the first tasks of ACCDTS was to review a contractor's report on methods of including on toponymic data bases "hard-to-construct" character sets used in Athapaskan geographical names and in various syllabic scripts. The advisory committee is promoting the dissemination of digital toponymic data and, in recommendations to the CPCGN, addresses the need for appropriate agreements to be in place for distribution of data to end-users and to licensees.